The accessories listed in this manual are available at extra cost from your local dealer, Black & Decker Service Center, or by writing to: Customer Services, Black & Decker (U.S.) Inc., Towson, Maryland 21204

BENCH GRINDER ACCESSORIES

No. 34576 One Replacement Glass for Eye Shield

No. 19115 Cutter Wheel Dresser . . . Has spare set of cutter wheels. Dresses wheels quickly for fast grinding.

No. 21961 Diamond Dresser . . . Produces an accurate, smooth face for finish grinding.

No. 53536 Pedestal . . . Holds grinder at convenient height. Has detachable water pot. Height: 31-5/8"; Base: 16" square.

WARNING: Recommended accessories for your Bench Grinder are shown above and at right. The use of any other accessory or attachment might be hazardous.

GRINDING WHEELS

Black & Decker Grinding Wheels are manufactured by the nation's leading abrasive manufacturers to stringent quality specifications.

Use with tools	Cat. No.	Wheel Diam.	Wheel Face	Hole	Specifications	Style Type
ALL 6" and 7" BENCH GRINDERS	39022 39023	6"	5/8"	1/2"	A60 R V* A46 R V†	1 1
6" H.D. and 7" H.D. BENCH GRINDERS	15314 15315	6"	3/4"	1/2"	A60 R V* A46 R V†	1 1
7" H.D. BENCH GRINDER	59552 59553	7" 7"	3/4" 3/4"	1/2" 1/2"	A46 N V† A60 N V*	1 1
8" H.D. BENCH GRINDER	18061 18062	8"	7/8"	5/8"	A36 N6V† A60 L6V*	1 1

* Medium † Coarse

WIRE WHEEL BRUSHES

IMPORTANT: Read wire brushing instructions on page 3 before using brushes.

	Cat. No.	Brush Dia.	Max. Safe RPM	No. of Sections	Brush Width Hub	Brush Width Face	Arbor Hole Size Adapter
.014" WIRE DIAM. (30 GAGE) (for rough general purpose cleaning)	39011			1	7/16"	5/8"	1/2"
	39012	6"	3750	2	11/16"	1"	
	59601	7"	3600	1	7/16"	5/8"	1/2"
	23206			1	7/16"	5/8"	5/8"
	23207	8"	3600	2	11/16"	1"	
.0118" WIRE DIAM. (33 GAGE) (for high-speed buffing operations)	27003			1	7/16"	5/8"	1/2"
	27004	6"	3750	2	11/16"	1"	
	27009			1	7/16"	5/8"	5/8"
	27010	8"	3600	2	11/16"	1"	
.006" WIRE DIAM. (43 GAGE) (for fine finishing and burnishing)	39010			1	7/16"	5/8"	5/8"
	23212	6"	3750	2	11/16"	5/8"	5/8"
	23217			1	7/16"	5/8"	5/8"
	23218	8"	3600	2	11/16"	1"	

COTTON BUFFING WHEEL

No. 39016 6" Diameter, 5/8" Wide, 1/2" hole.

SERVICE

To assure product reliability, repairs, maintenance and adjustment should be performed by BLACK & DECKER Service Centers or Black & Decker Authorized Service Centers, always using B&D replacement parts.

COMMERCIAL/INDUSTRIAL USE WARRANTY

Black & Decker warrants this product for one year from date of purchase. We will repair without charge, any defects due to faulty material or workmanship. Please return the complete unit, transportation prepaid, to any Black & Decker Service Center or Authorized Service Station listed under "Tools Electric" in the yellow pages. This warranty does not apply to accessories or damage caused where repairs have been made or attempted by others.

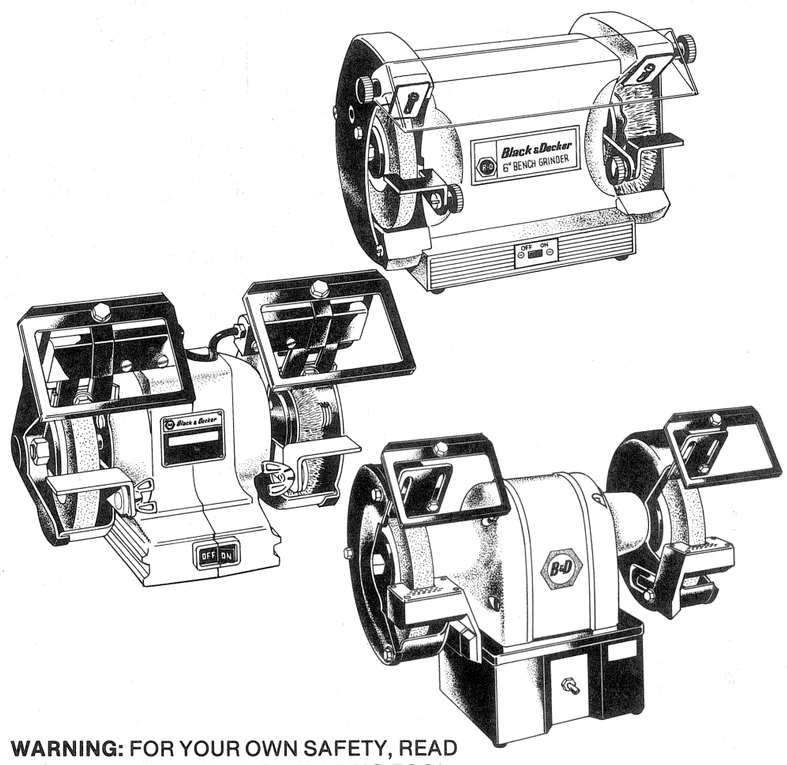
SERVICE CENTER ADDRESSES ARE SHOWN ON REGISTRATION CARD PACKED WITH YOUR TOOL.

BLACK & DECKER (U.S.) INC., TOWSON, MD. 21204, U.S.A.

Form No. 724156-01 (FEB80-CD) Printed in U.S.A.

Black & Decker®

OWNER'S MANUAL



WARNING: FOR YOUR OWN SAFETY, READ THIS MANUAL BEFORE OPERATING TOOL.

6", 7", 8" BENCH GRINDERS

RULES FOR SAFER OPERATION OF STATIONARY POWER TOOLS

1. **KEEP GUARDS IN PLACE** and in working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
4. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. **KEEP CHILDREN AWAY.** All visitors should be kept safe distance from work area.
6. **MAKE WORKSHOP KID PROOF** with padlocks, master switches, or by removing starter keys.
7. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
9. **WEAR PROPER APPAREL.** No loose clothing, neckties, rings, bracelets, or other jewelry to get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
10. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses. they are NOT safety glasses.
11. **DON'T OVERREACH.** Keep proper footing and balance at all times.
12. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
13. **DISCONNECT TOOLS** before servicing; when changing accessories such as blades, bits, cutters, etc.
14. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.
15. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
16. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
17. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function — check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
18. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.**

ADDITIONAL GRINDER SAFETY RULES

1. Always use guards and eye shields. Always wear safety glasses or other eye protection when operating this tool and keep the eye shields mounted in their proper position on the wheel guard.
2. Replace a cracked wheel immediately. Handle grinding wheels carefully to avoid bumping or dropping. DO NOT use a grinding wheel that has been dropped. Before using, inspect each grinding wheel for cracks or flaws and if these are evident, discard the wheel.
3. Before mounting a new wheel, be sure that it is marked with an R.P.M. that is the same as, or higher than, the no-load speed of the grinder as marked on the nameplate. Do not overtighten wheel nut. Use only flanges furnished with this grinder. Keep Tool Rests and Spark Shields adjusted.
4. Never start a grinder with anyone, including the operator, standing in line with the wheel. After installing a replacement wheel, stand to one side and allow it to revolve freely for about one minute.
5. Do not grind on the sides of grinding wheels unless they are the special wheels designed specifically for this purpose.
6. Do not over-tighten wheel nut.
7. Use only flanges furnished with this grinder.
8. Bolt Bench Grinder to a bench or pedestal to prevent movement.
9. Use accessories only in the proper and intended manner.

ELECTRICAL CONNECTIONS AND GROUNDING

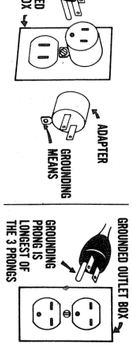
This tool should be grounded while in use to protect the operator from electric shock.

We recommend that you NEVER dissemble the tool or try to do any rewiring in the electrical system. Any such repairs should be performed only by B&D Service Centers or other qualified service organizations. Should you be determined to make a repair yourself, remember that the green colored wire is the "grounding" wire. Never connect this green wire to a "live" terminal.

1. **Cord-Connected Tools**: In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided — if it will not fit the outlet, have the proper outlet installed by a qualified electrician. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as the whether the tool is properly grounded. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. Repair or replace damaged or worn cord immediately.

1A. Grounded, cord-connected tools intended for use on a supply circuit having a nominal rating less than 150 volts. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated in Sketch A. The tool has a grounding plug that looks like the plug illustrated in Sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in Sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, etc. extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box. Adapter shown in Sketches B and C is Not for Use in Canada.

1B. Grounded, cord-connected tools intended for use on a supply circuit having a nominal rating between 150-250 volts, inclusive. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated in Sketch D. The tool has a grounding plug that looks like the plug illustrated in Sketch D. Make sure the tool is connected to an outlet having the same configuration as the plug. No adapter is available or should be used with this tool. If the tool must be reconnected for use on a different type of electric circuit, the reconnection should be made by qualified service personnel; and after reconnection, the tool should comply with all local codes and ordinances.



2. **Permanently connected tools:** This tool should be connected to a grounded, metal, permanent wiring system; or to a system having an equipment-grounding conductor.

MOTOR

Your Bench Grinder is equipped with a B&D built induction Motor. Specifications are as follows:

Cat. No.	Phase	H.P.	Rated at 120V	Cycles	R.P.M. (no-load)	Voltage
6" 4305	1	1/4	5.3/5.1 Amps.	50/60	3000/3600	120, 220 A.C.
6" 4310, 4315	1	1/3	5.0/4.4 Amps.	50/60	3000/3600	120, 220 A.C.
7" 4320, 4321,	1	1/3	5.0/4.4 Amps.	50/60	3000/3600	120, 220 A.C.
8" 4325	1	3/4	10.0/9.75 Amps.	50/60	3000/3600	120, 220 A.C.
8" 4326	3	3/4	2.4/2.3 Amps.*	50/60	3000/3600	220, 440 A.C.†

* at 220 Volts † Reconnectable for either voltage

Bench Grinder motors require more current when starting than is required for normal running. Because of this, it is possible to blow a fuse or trip a circuit breaker when first starting the grinder. To avoid this it is advisable to use a "fuse-ridge type "Fusetron" fuse rather than step up to a higher capacity fuse. This will prevent blowing fuses but still provide the necessary overload protection.

3 Phase units must be connected to the power supply to provide the correct direction of rotation (clockwise viewed from left side).

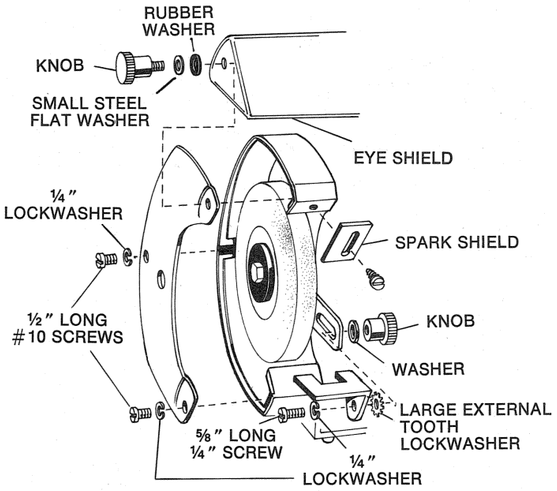
EXTENSION CORD *(1 Phase Units Only)*

When using the tool at a considerable distance from power source, a 3-connector, grounding-type extension cord of adequate size must be used for safety and to prevent loss to power and over-heating. Use the table below to determine the minimum wire size required.

Use only three wire extension cords which have three-prong grounding-type plugs and three-pole receptacles which accept the tool's plug. Replace or repair damaged or worn cord immediately.

Ampere rating (on nameplate)	0 to 2.0	2.10 to 3.4	3.5 to 5.0	5.10 to 7.0	7.10 to 12.0	12.1 to 16.0
Ext. Cable length	Wire Size (A.W.G.)					
25 ft.	18	18	18	18	16	14
50 ft.	16	16	16	16	14	12
75 ft.	16	16	16	14	12	10
100 ft.	16	16	14	12	10	—
150 ft.	14	14	12	12	—	—
200 ft.	14	14	12	10	—	—

ASSEMBLING 6" BENCH GRINDER NO. 4305



Spark Shields should be attached to the tops of the wheel guards with included ½" long self-tapping screws. Keep shields adjusted so that there is 1/16" clearance between the shields and the grinding wheel or wire wheel brush.

The **Wheel Guard Covers** are installed with two screws and lockwashers. Nuts to accommodate the screws are embedded in the grinder housing.

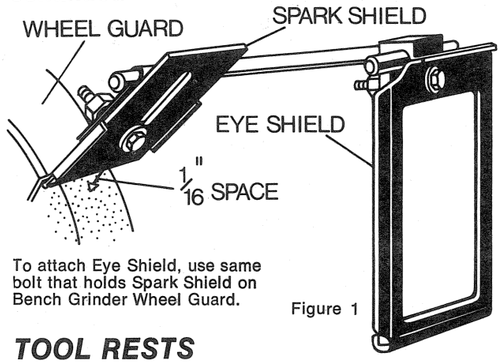
Place the **Plastic Eyeshield** in the circular notches on either side of the grinder housing. Attach rubber washer, small steel flat washer and knob. The shield can be raised from its normal position to accommodate unusually shaped pieces to be worked on.

Use **Notched Tool Rest** with the grinding wheel on left side of grinder. Use **Unnotched Tool Rest** with wire brush on right side of grinder. The tool rests slide in and out to adjust for wheel wear. They also swivel at right angles to the wheel for convenience in angle grinding. The tool rest should be adjusted so that there is 1/16" clearance between it and the grinding wheel or wire brush.

EYE SHIELDS & SPARK SHIELDS

Bench Grinders have Spark Shields which are mounted at the front of the wheel guards (Figure 1). As the grinding wheel wears down, the Shield should be kept adjusted so that the clearance between the wheel and the Shield is approximately 1/16".

EYE SHIELDS & SPARK SHIELDS *continued*



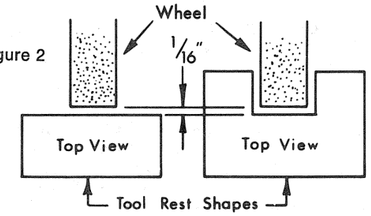
To attach Eye Shield, use same bolt that holds Spark Shield on Bench Grinder Wheel Guard.

Figure 1

TOOL RESTS

Tool Rests are adjustable for wheel wear. Keep them adjusted so that a clearance of 1/16" is maintained between the wheel and the tool rest. This clearance is very important as it will prevent a piece of any consequence, which could break off the item being ground, from jamming between the wheel and the tool rest. Such jamming could fracture the wheel, break the tool rest, or both.

Figure 2



BENCH MOUNTING

Bench Grinders should be solidly attached to the bench for safer and more efficient operation.

6" (NO. 4305) BENCH GRINDER (Figure 3A):

To prevent movement of the grinder when pressure is applied against a wheel, attach grinder to bench with two 1/4" bolts. Drill holes through bench at locations shown in Figure 3A. Insert bolt heads into slots "A" in bottom of grinder and slide bolts outward. Feed bolts through holes in bench and fasten each bolt with two nuts to keep bolts from loosening during operation. Tighten bolts only enough to compress rubber feet about 1/16" to keep feet effective in absorbing vibration.

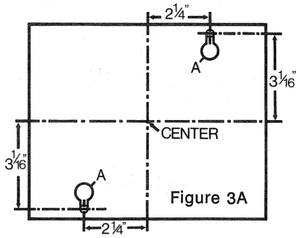


Figure 3A

6" and 7" (NOS. 4310, 4315) BENCH GRINDERS (Figure 3B): Two 1/4"-20 or 1/4"-28 square head bolts, two 1/4" nuts, two 1/4" flat washers, and two 1/4" lockwashers are required (not supplied). Bolt length should be approximately the thickness of the bench top **plus 1 inch.**

Figure 3B shows the location of the required mounting holes in the bench.

DISTANCE "A" — To suit user's application.
DISTANCE "B" — Approximately 4" for 1/4" set-back from front edge of bench.

Place bolt heads in slots through base of Bench Grinder and lower bolts through holes in bench. Attach washers and nuts and tighten securely. (Continued next column)

BENCH MOUNTING *continued*

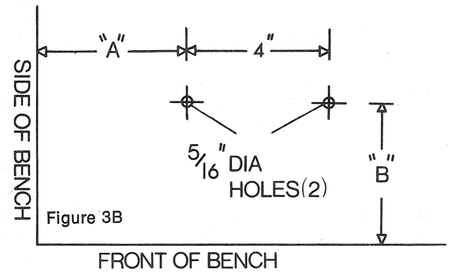


Figure 3B

8" BENCH GRINDERS (Figure 4):
Two 1/4"-28 bolts, two 1/4" flat washers, and two 1/4" lockwashers are required (not supplied). Bolt length should be approximately the thickness of the bench top **plus 1 inch.**

Figure 4 shows the location of the required mounting holes in the bench.

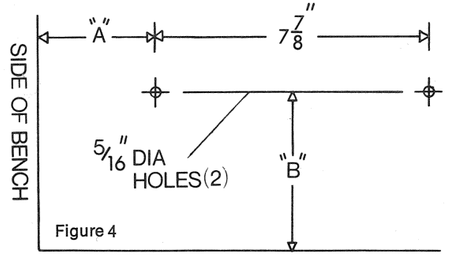


Figure 4

DISTANCE "A" — To suit user's application.
DISTANCE "B" — Approximately 4-1/2" for 1/4" set-back from front edge of bench.

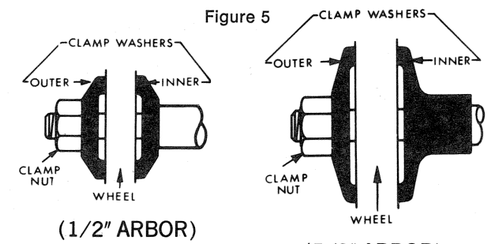
Place Bench Grinder on bench and insert bolts with washers up from underneath bench top. Line up bolts with tapped holes in bottom of Bench Grinder and tighten securely.

CHANGING WHEELS

With 6" & 7" Bench Grinders, UNPLUG POWER CORD AND BE SURE THAT SWITCH REMAINS IN THE "OFF" POSITION.

With 8" Bench Grinders, which are permanently wired to the power source, disconnect the power source at the disconnect switch, fuse panel or circuit breaker panel.

Figure 5



NOTE: Each grinding wheel purchased should be equipped with a blotter fastened to each side of the wheel. Blotters must always be used between the wheel and the inner and outer clamp washers.

CHANGING WHEELS *continued*

Grinding Wheels

1. Remove wheel guard covers.
2. Remove clamp nut by turning it in the same direction as the wheel turns. (Figure 5).
3. Remove wheel and both clamp washers. Inspect washers. If they are burred or not perfectly flat, repair or replace them.
4. When installing the new grinding wheel, always use blotters between the wheel and each washer. Contact surfaces of wheels, blotters and washers must be clean and flat.
5. Always use the exact type of washers that are supplied with your tool. Never substitute flat or odd sized washers.
6. Only tighten arbor nut sufficiently to drive the wheel without slippage.
7. Be sure to replace guard end covers, and adjust spark shields, tool rests and eye shields before operating tool. (Figs. 1 & 2).
8. After installing replacement wheel, put on safety goggles and stand to the side of the grinder, turn switch "ON" and allow wheel to revolve freely for one minute before beginning to grind.

Wire Wheel Brushes

1. FOLLOW STEPS 1, 2 & 3 under "Grinding Wheels" above. Use the two arbor adaptors included with the brush, and the two clamp washers on the Bench Grinder.
2. Protect your hands with gloves or a rag when handling Wire Wheels.
3. FOLLOW STEPS 5, 6 & 7 under "Grinding Wheels".

Cotton Buffing Wheels

1. FOLLOW STEPS 1, 2 & 3 under "Grinding Wheels" above. Install wheel with a clamp washer on each side of wheel and tighten nut sufficiently to keep wheel from slipping. Attach guard end covers.
2. Put on safety goggles before starting any buffing operations.

GRINDING INSTRUCTIONS

Put on safety goggles and hold the work firmly. Rest the work on the tool rest and feed it slowly into the wheel at the desired grinding angle. Treat the wheel with respect . . . do not jam the work into the wheel or use unnecessary pressure. Grind only on the face of the wheel, unless you have a special wheel specifically made to permit grinding on the side of the wheel.

When grinding tempered tools such as chisels and knives, keep a container of cutting fluid or water nearby. During the grinding operation, frequently dip the top part of the work into the liquid to avoid overheating and losing the temper. In fact, all metals can be ground more efficiently if they are "quenched" in this manner to avoid overheating which can soften or "burn" the metal.

WIRE BRUSHING INSTRUCTIONS

Wire Brushes are used to remove rust, scale and old paint. Do not jam work into wheel. Hold work firmly while brushing. Always wear safety goggles for protection against particles thrown from brush and work piece.

BUFFING INSTRUCTIONS

Use Cotton Buffing Wheels, normally with stick buffing compound applied to the face of the wheel (usually about 5/8" wide). Wear safety goggles for protection against particles of compound thrown off by the wheel. Do not jam work into wheel. Hold work firmly.

LUBRICATION

No periodic lubrication of the Bench Grinder is required.